REMARKS

Prior to entry of this amendment, Claims 1-20 were pending in the application, with Claims 1-5, 7-9, 12-16, 18 and 19 standing rejected and Claims 6, 10, 11, 17 and 20 objected to. No claims are added or cancelled through this amendment, hence, Claims 1-20 are pending in the application.

REJECTIONS NOT BASED ON THE PRIOR ART

Rejections under 35 U.S.C. § 101

Paragraph 1 of the Office Action rejected Claims 1 and 8 under 35 U.S.C. § 101, alleging that the invention claimed in Claims 1 and 8 is directed to non-statutory subject matter. The Office Action alleges that the subject matter is abstract in that it describes logical steps capable of being implemented without electronic processing. Applicant respectfully disagrees with this allegation, and traverses this rejection.

However, in order to expedite the examination of the application, Claims 1 and 8 are amended herein. Claim 1 and Claim 8 are amended to recite "computer-implemented" steps and thus clearly read on patentable, statutory subject matter. Therefore, withdrawal of the rejection of Claim 1 and Claim 8 is respectfully requested.

REJECTIONS BASED ON THE PRIOR ART

Rejections under 35 U.S.C. § 102(e)

Paragraph 2 of the Office Action rejects Claims 1-5, 7-9, 12-16, 18 and 19 under 35 U.S.C. § 102(e) as allegedly being anticipated by Perlin et al. ("Perlin"; U.S. Pat. No. 6,285,380). Applicant respectfully traverses the rejection of these Claims on this basis.

The present application includes a claim of priority to U.S. Provisional Patent Application No. 60/105,512 entitled "3-D Modeling Through A Scripting Language," filed on **October 23, 1998** under 35 U.S.C. § 111(b). The subject matter disclosed in the aforementioned provisional patent application is disclosed in a manner provided by 35 U.S.C. § 112 and, therefore, fully supports each of the features of each of Claims 1-20. Furthermore, the present application includes a specific reference to the aforementioned provisional application, pursuant to 35 U.S.C. § 119(e).

The present application was filed less than 12 months after the date on which the aforementioned provisional application was filed. Therefore, the right of priority to U.S. Provisional Patent Application No. 60/105,512 is hereby asserted.

The Perlin reference has a §102(e) date of **November 4, 1998**. Hence, based on the right of priority to the provisional application, the Perlin reference is removed as prior art to the present application. Consequently, any rejection of any claims based on Perlin as prior art cannot stand. Withdrawal of the rejection of Claims 1-5, 7-9, 12-16, 18 and 19 on this basis is respectfully requested.

In addition, even if the preceding assertion of the right of priority to the provisional application is for any reason unsuccessful, it can be proven that the invention described in the application antedates the effective prior art date of the Perlin reference. However, it is not deemed necessary to provide such probative evidence at this time.

OBJECTIONS

Paragraph 3 of the Office Action objects to Claims 6, 10, 11, 17 and 20 as being dependent upon rejected base claims. It is shown above that the rejections of the base claims cannot stand based on the references of record. Thus, Claims 6, 10, 11, 17 and 20 are

patentable, in their current form as originally filed, over the references of record. Therefore, no amendments are made to these claims at this time.

For examination purposes, the amended portion of the Specification and all of the pending claims are presented below, with markings showing the changes made in this amendment.

CONCLUSION

For at least the reasons indicated above, Applicant respectfully submits that all of the pending claims (i.e., Claims 1-20) present patentable subject matter over the art of record, including that which was cited but not applied, and are in condition for allowance. Therefore, Applicant respectfully requests that a timely Notice of Allowance be issued in this case. If the Examiner has questions regarding this case, the Examiner is invited to contact Applicant's undersigned representative.

To the extent necessary, a petition for an extension of time under 37 C.F.R. §1.136 is hereby made. Please charge any shortages in fees due in connection with the filing of this paper, including extension of time fees, or credit any overages to Deposit Account No. 50-1302.

Respectfully submitted,
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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, Washington, DC 20231

on 10/8/02 by Clare C. Tsing

VERSIONS WITH MARKINGS TO SHOW CHANGES MADE

In the Specification:

For the paragraph beginning on page 13, line 1:

Referring to FIG. 2, statement [210] 200 specifies an operation is to be applied to a set of objects that are identified by matching criteria, where each object in the set is associated with an identifier that the satisfies the matching criteria. Statement [210] 200 includes operation identifier 212, which identifies an assignment operation and references pattern-attribute identifier 218. Pattern-attribute-identifier 218 includes identifier-pattern 214, and attribute-identifier 216. Pattern-attribute-identifier 218 conforms to object-dot-attribute notation, including an object indicator in the form of identifier-pattern 214.

For the paragraph beginning on page 13, line 14:

For example, a scene contains graphical components box01, box02, and box03, and other graphical components associated with other object identifiers. Identifier-pattern 214 contains the wild card character '*', thus any identifier that begins with string 'box' satisfies the criteria specified by identifier-pattern 214. When CAD system 100 executes statement [210] 200, it applies the assignment operation to the position attribute of box01, box02, and box03.

For the paragraph beginning on page 15, line 11:

Referring to FIG. 2, statement 220 includes operation identifier 222, which identifies an assignment operation. Operation identifier 222 references pattern-attribute-identifier 228,

which includes hierarchy pattern identifier 224. When CAD system 100 executes statement 220, it applies the assignment operation to the position attribute of graphical components associated with hierarchical identifiers that match the pattern matching criteria specified by hierarchy pattern identifier 224, adding the value specified by '[10,0,0]' to the current value of the position attribute. For example, assume that a scene depicts a farm with farm animals, such as pigs, horses, cows, and chickens. Graphical components 'chicken01/right_leg', 'chicken01/left_leg', 'chicken02/right_leg', ['chicken01/left_leg']'chicken02/left_leg', and ['chick01/right_leg', and 'chicken01/left_leg']'chicken03/right_leg', 'chicken03/left_leg' are graphical components in the scene used to represent the legs of all the chickens in the scene. When CAD system 100 executes statement 220, it applies the assignment operation to position attribute of the graphical components depicting chicken legs in the scene.

For the paragraph beginning on page 17, line 3:

Another kind of object collection identifier that may be used is a native type identifier, as illustrated by statement [250] 260. In statement [250] 260, operation identifier [242] 252 references collection-attribute-identifier 258. Collection-attribute-identifier 258 includes native category identifier 254, which identifies a native type. When CAD system 100 encounters a collection-attribute-identifier referenced by an operation identifier, and the collection identifier in the collection-attribute identifier identifies a native type identifier, then CAD system 100 applies the identified operation to the identified attribute of each graphical component that is an instance of the native type in a scene.

For the paragraphs beginning on page 18, line 2 and ending on page 21, line 7:

Figure [4] 3 is a block diagram that illustrates a computer system [400] 300 upon which an embodiment of the invention may be implemented. Computer system [400] 300 includes a bus [402] 302 or other communication mechanism for communicating information, and a processor [404] 304 coupled with bus [402] 302 for processing information. Computer system [400] 300 also includes a main memory [406] 306, such as a random access memory (RAM) or other dynamic storage device, coupled to bus [402] 302 for storing information and instructions to be executed by processor [404]304. Main memory [406] 306 also may be used for storing temporary variables or other intermediate information during execution of instructions to be executed by processor [404] 304. Computer system [400] 300 further includes a read only memory (ROM) [408] 308 or other static storage device coupled to bus [402] 302 for storing static information and instructions for processor [404] 304. A storage device [410] 310, such as a magnetic disk or optical disk, is provided and coupled to bus [402] 302 for storing information and instructions.

Computer system [400] 300 may be coupled via bus [402] 302 to a display [412] 312, such as a cathode ray tube (CRT), for displaying information to a computer user. An input device [414] 314, including alphanumeric and other keys, is coupled to bus [402] 302 for communicating information and command selections to processor [404] 304. Another type of user input device is cursor control [416] 316, such as a mouse, a trackball, or cursor direction keys for communicating direction information and command selections to processor [404] 304 and for controlling cursor movement on display [412] 312. This input device typically has two degrees of freedom in two axes, a first axis (e.g., x) and a second axis (e.g., y), that allows the device to specify positions in a plane.

The invention is related to the use of computer system [400] 300 for implementing the techniques described herein. According to one embodiment of the invention, those techniques are implemented by computer system [400] 300 in response to processor [404]

304 executing one or more sequences of one or more instructions contained in main memory [406] 306. Such instructions may be read into main memory [406] 306 from another computer-readable medium, such as storage device [410] 310. Execution of the sequences of instructions contained in main memory [406] 306 causes processor [404] 304 to perform the process steps described herein. In alternative embodiments, hard-wired circuitry may be used in place of or in combination with software instructions to implement the invention. Thus, embodiments of the invention are not limited to any specific combination of hardware circuitry and software.

The term "computer-readable medium" as used herein refers to any medium that participates in providing instructions to processor [404] 304 for execution. Such a medium may take many forms, including but not limited to, non-volatile media, volatile media, and transmission media. Non-volatile media includes, for example, optical or magnetic disks, such as storage device [410] 310. Volatile media includes dynamic memory, such as main memory [406] 306. Transmission media includes coaxial cables, copper wire and fiber optics, including the wires that comprise bus [402] 302. Transmission media can also take the form of acoustic or light waves, such as those generated during radio-wave and infra-red data communications.

Common forms of computer-readable media include, for example, a floppy disk, a flexible disk, hard disk, magnetic tape, or any other magnetic medium, a CD-ROM, any other optical medium, punchcards, papertape, any other physical medium with patterns of holes, a RAM, a PROM, and EPROM, a FLASH-EPROM, any other memory chip or cartridge, a carrier wave as described hereinafter, or any other medium from which a computer can read.

Various forms of computer readable media may be involved in carrying one or more sequences of one or more instructions to processor [404] 304 for execution. For example, the instructions may initially be carried on a magnetic disk of a remote computer. The remote computer can load the instructions into its dynamic memory and send the instructions over a

telephone line using a modem. A modem local to computer system [400] 300 can receive the data on the telephone line and use an infra-red transmitter to convert the data to an infra-red signal. An infra-red detector can receive the data carried in the infra-red signal and appropriate circuitry can place the data on bus [402] 302. Bus [402] 302 carries the data to main memory [406] 306, from which processor [404] 304 retrieves and executes the instructions. The instructions received by main memory [406] 306 may optionally be stored on storage device [410] 310 either before or after execution by processor [404] 304.

Computer system [400] 300 also includes a communication interface [418] 318 coupled to bus [402] 302. Communication interface [418] 318 provides a two-way data communication coupling to a network link [420] 320 that is connected to a local network [422] 322. For example, communication interface [418] 318 may be an integrated services digital network (ISDN) card or a modem to provide a data communication connection to a corresponding type of telephone line. As another example, communication interface [418] 318 may be a local area network (LAN) card to provide a data communication connection to a compatible LAN. Wireless links may also be implemented. In any such implementation, communication interface [418] 318 sends and receives electrical, electromagnetic or optical signals that carry digital data streams representing various types of information.

Network link [420] 320 typically provides data communication through one or more networks to other data devices. For example, network link [420] 320 may provide a connection through local network [422] 322 to a host computer [424] 324 or to data equipment operated by an Internet Service Provider (ISP) [426] 326. ISP [426] 326 in turn provides data communication services through the world wide packet data communication network now commonly referred to as the "Internet" [428] 328. Local network [422] 322 and Internet [428] 328 both use electrical, electromagnetic or optical signals that carry digital data streams. The signals through the various networks and the signals on network link [420] 320 and through communication interface [418] 318, which carry the digital data to and from

computer system [400] 300, are exemplary forms of carrier waves transporting the information.

Computer system [400] 300 can send messages and receive data, including program code, through the network(s), network link [420] 320 and communication interface [418] 318. In the Internet example, a server [430] 330 might transmit a requested code for an application program through Internet [428] 328, ISP [426] 326, local network [422] 322 and communication interface [418] 318. In accordance with the invention, one such downloaded application implements the techniques described herein.

The received code may be executed by processor [404] 304 as it is received, and/or stored in storage device [410] 310, or other non-volatile storage for later execution. In this manner, computer system [400] 300 may obtain application code in the form of a carrier wave.

In the Claims:

1. (Amended) A method of executing an operation on a set of objects, the method comprising the computer-implemented steps of:

detecting that a statement contains

an operation identifier that specifies an operation,

pattern matching criteria, and

an attribute identifier that identifies an attribute; and

executing said statement by

identifying all objects associated with identifiers that satisfy said pattern matching criteria, and

performing said operation on said attribute of each of said objects that satisfy said pattern matching criteria.

2. (Unchanged) The method of Claim 1, wherein said statement includes a first string of characters that contains at least one wild card character and that specifies said pattern matching criteria.

3. (Unchanged) The method of Claim 2, wherein said first string is part of a second string of characters, wherein said second string of characters includes said attribute identifier and is in a format that conforms to object-dot notation.

4. (Unchanged) The method of Claim 1, wherein the step of identifying includes identifying a set of graphical components associated with identifiers that satisfy said

pattern matching criteria, and said step of performing includes performing said operation on said attribute of each graphical component in said set of graphical components.

5. (Unchanged) The method of Claim 1, wherein said statement is written in a scripting language and the step of detecting is performed by a script processor.

6. (Unchanged) The method of Claim 5, the script processor is part of a CAD system and the step of identifying is performed by identifying objects within said CAD system that are associated with an identifier that matches said pattern matching criteria.

7. (Unchanged) The method of Claim 1, wherein the step of detecting that a statement contains pattern matching criteria includes detecting that the statement contains pattern matching criteria for a hierarchical identifier.

8. (Amended) A method of executing an operation on collections of objects, the method comprising the computer-implemented steps of:

detecting that a statement contains

an operation identifier that specifies said operation,

an identifier that is associated with a collection of objects, and

an attribute identifier that identifies an attribute of a member object of said collection of objects; and

executing said statement by

identifying member objects of said collection of objects, and

performing said operation on said attribute of each of said identified member objects.

9. (Unchanged) The method of Claim 8, wherein said collection of objects is an array.

10. (Unchanged) The method of Claim 8, wherein said collection of objects includes all instances of a native type of graphical components managed by a CAD system.

11. (Unchanged) The method of Claim 10, wherein said native type is a map type of graphical components, wherein a map type defines a surface.

12. (Unchanged) A computer-readable medium carrying one or more sequences of one or more instructions for executing an operation on a set of objects, the one or more sequences of one or more instructions including instructions which, when executed by one or more processors, cause the one or more processors to perform the steps of:

detecting that a statement contains

an operation identifier that specifies an operation,

pattern matching criteria, and

an attribute identifier that identifies an attribute; and

executing said statement by

identifying all objects associated with identifiers that satisfy said pattern matching criteria, and

performing said operation on said attribute of each of said objects that satisfy said pattern matching criteria.

13. (Unchanged) The computer-readable medium of Claim 12, wherein said statement includes a first string of characters that contains at least one wild card character and that specifies said pattern matching criteria.

14. (Unchanged) The computer-readable medium of Claim 13, wherein said first string is part of a second string of characters, wherein said second string of characters includes said attribute identifier and is in a format that conforms to object-dot notation.

15. (Unchanged) The computer-readable medium of Claim 12, wherein the step of identifying includes identifying a set of graphical components associated with identifiers that satisfy said pattern matching criteria, and said step of performing includes performing said operation on said attribute of each graphical component in said set of graphical components.

16. (Unchanged) The computer-readable medium of Claim 12, wherein said statement is written in a scripting language and the step of detecting is performed by a script processor.

17. (Unchanged) The computer-readable medium of Claim 16, the script processor is part of a CAD system and the step of identifying is performed by identifying objects within said CAD system that are associated with an identifier that matches said pattern matching criteria.

18. (Unchanged) A computer-readable medium carrying one or more sequences of one or more instructions for executing an operation on collections of objects, the one or more sequences of one or more instructions including instructions which, when executed by one or more processors, cause the one or more processors to perform the steps of:

detecting that a statement contains

an operation identifier that specifies said operation,

an identifier that is associated with a collection of objects, and

an attribute identifier that identifies an attribute of a member object of said collection of objects; and

executing said statement by

identifying member objects of said collection of objects, and

performing said operation on said attribute of each of said identified member objects.

19. (Unchanged) The computer-readable medium of Claim 18, wherein said collection of objects is an array.

20. (Unchanged) The computer-readable medium of Claim 18, wherein said collection of objects includes all instances of a native type of graphical components managed by a CAD system.